WHAT IS CLAIMED IS:

1. A muscle strengthening and rehabilitation apparatus, comprising:

a first surface for receiving at least one extremity; and

a generally hemi-ellipsoidal second surface for contacting a support surface, wherein the second surface allows for pivotal movement of the extremity in any direction, and the radius of curvature of the movement varies depending upon the direction the extremity is pivoted.

2. The muscle strengthening and rehabilitation apparatus of claim 1, wherein the first surface is generally flat and elliptical, having a major diameter and a minor diameter.

3. The muscle strengthening and rehabilitation apparatus of claim 2, wherein a thickness is defined as the distance from the first surface to the second surface measured along a line approximately normal to the first surface and passing through the intersection of the major and minor diameters, and wherein the length of the major diameter is about 13.5 inches, the length of the minor diameter is about 6.0 inches, and the thickness is about 3.0 inches.

4. The muscle strengthening and rehabilitation apparatus of claim 1, wherein the apparatus comprises a one-piece polyethylene material.

5. The muscle strengthening and rehabilitation apparatus of claim 1, wherein the second surface further comprises a flat area allowing the apparatus to remain stationary with the first surface oriented upward when the apparatus is not in use.

6. The muscle strengthening and rehabilitation apparatus of claim 1, wherein the second surface further comprises a generally flat, circumferential band disposed adjacent to the first surface.

7. The muscle strengthening and rehabilitation apparatus of claim 1, further comprising a plate attached to the first surface.

8. A one-piece muscle exercise apparatus, comprising:

an upper surface for receiving a user's extremity; and

a convex lower surface for contacting a support surface, the lower surface having a plurality of different radii allowing the extremity to pivot about the lower surface in any direction, such that exercises utilizing the different radii can be performed without reorienting the extremity on the upper surface.

9. The muscle exercise apparatus of claim 8, wherein the upper surface is generally flat and elliptical, and the lower surface is substantially hemi-ellipsoidal.

10. The muscle exercise apparatus of claim 8, wherein the apparatus comprises a foam material having a density greater than about 2.5 pounds per cubic foot.

11. The muscle exercise apparatus of claim 8, further comprising a plate attached to the upper surface.

12. A muscle strengthening and rehabilitation apparatus, comprising:

a unitary polyethylene foam structure having a density greater than about 2.5 pounds per cubic foot, wherein the foam structure has a generally flat first surface for receiving at least one extremity, the first surface having a length of approximately 13.5 inches, and a substantially hemi-ellipsoidal second surface for contacting a support surface and creating a contact point thereon,

wherein pivotal movement of the extremity changes the position of the contact point to allow for movement in any direction, and the radius of curvature of the movement varies depending upon the direction the extremity is pivoted.

13. The muscle strengthening and rehabilitation apparatus of claim 12, wherein the first surface is generally elliptical, having a major diameter and a minor diameter.

14. The muscle strengthening and rehabilitation apparatus of claim 13, wherein a thickness is defined as the distance from the first surface to the second surface measured along a line approximately normal to the first surface and passing through the intersection of the major and minor diameters, and wherein the length of the minor diameter is about 6.0 inches and the thickness is about 3.0 inches.

15. A method of muscle strengthening and rehabilitation, comprising:

providing an apparatus having a first surface and a generally hemi-ellipsoidal second surface;

disposing the apparatus between at least one extremity and a support surface, wherein the extremity contacts the first surface and the second surface contacts the support surface; and

pivotally moving the extremity while it remains on the first surface, wherein the radius of curvature of the movement varies depending upon the direction the extremity is pivoted.

16. The method of claim 15, wherein disposing the apparatus comprises placing at least one foot on the first surface, and placing the second surface in contact with a wall.

17. The method of claim 15, wherein disposing the apparatus comprises placing at least one foot on the first surface, and placing the second surface in contact with a floor.

18. The method of claim 15, wherein disposing the apparatus comprises placing at least one hand on the first surface, and placing the second surface in contact with a wall.

19. The method of claim 15, wherein disposing the apparatus comprises placing at least one hand on the first surface, and placing the second surface in contact with a floor.

20. A method of increasing proprioception, comprising:

providing an apparatus with a first surface and a generally hemi-ellipsoidal second surface;

disposing the apparatus between at least one of a user's feet and a support surface, wherein the user's foot contacts the first surface, and the second surface contacts the support surface; and

shifting at least a portion of the user's weight to the foot on the first surface, such that the user must at least partially balance on the apparatus.